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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/688,997

10/21/2003

Toshiaki Sato

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5514 7590 03/21/2007  
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EXAMINER

TRAN, NHAN T

ART UNIT

PAPER NUMBER

2622

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No. 10/688,997	Applicant(s) SATO ET AL.	
	Examiner Nhan T. Tran	Art Unit 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10/21/2003 & 2/26/2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of species II represented by Figure 13, claims 5-8 in the reply filed on 2/26/2007 is acknowledged. The traversal is on the ground that the two species are closely related and would not require separate fields of search. This is not found persuasive because the two species are distinct from each other. It is clearly described in the specification and drawings that the species I (Fig. 11) have two distinct sub-species (Figs. 9 and Fig. 10) which are also distinct from species II (Fig. 13) for at least the circuit configurations. For example, species I requires two consecutive amplifiers connected in series as shown in block 117 of Fig. 11 while the species II only requires one amplifier 180. Furthermore, detailed structures of two sub-species (Fig. 9 and Fig. 10) of species I are also different from species II (details shown in Fig. 14) by the number of transistors and resistors used. Thus, it cannot be said that it would not put serious burden on the Examiner for searching.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims 1-8 are pending, claims 1-4 are withdrawn from consideration.

### ***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 3/1/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

***Drawings***

4. **Figures 1-8** should be designated by a legend such as **--Prior Art--** because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art in view of Noda et al. (US 4,333,111).

Regarding claim 5, the Admitted Prior Art (Figs 6 & 7) discloses a differential amplifying circuit (150 shown in Fig. 6 which is described in details in Fig. 7 and specification, pages 9 & 10) comprising:

- a first input element (220 at Vin+ side) to which a first signal is input (Fig. 7, page 9, lines 3-5 and page 10, lines 5-23);

- a second input element (another 220 at Vin- side) to which a second signal is input (Fig. 7, page 9, lines 3-5 and page 10, lines 5-23);

- a constant current circuit (current mirror circuit 240) that drives the first input element and the second input element, wherein the differential amplifying circuit outputs a differential signal (at output of 270) between the first signal input to the first input element and the second signal input to the second input element, and wherein the first input element and the constant current circuit are connected with each other through a first resistor element (resistor R1) (see Fig. 7 and specification, page 9, line 3 – page 10, line 23), the second input element and the constant current circuit are connected with each other through a **shared** resistor element (also resistor R1), an end of the first resistor element (R1) which is located on an opposite side (Ib2 side) to the first input element and an end of the **shared** resistor element (also R1) which is located on an opposite side (Ib1 side) to the second input element are connected with the constant

current circuit (see Fig. 7 and note that the current source Ib2 is identical to Ib1 as described in specification, page 10, lines 23-25).

Although the Admitted Prior Art discloses the shared resistor element (R1) for both first and second input elements, the Admitted Prior Art does not disclose a separate (second) resistor element that connects the second input element to the constant current circuit, and an end of the second resistor element connected with the constant current circuit.

However, as taught by Noda, it is well recognized that two separate resistor elements (46A and 46B shown in Fig. 8) are used for connecting two different input elements of a differential amplifier (40) to a constant current source (43) to effectively cancel reset noises so that only video signal component is obtained at the output of the differential amplifier (see Noda, Fig. 8 and col. 5, lines 40-52 and col. 8, lines 5-17).

Therefore, it would have been obvious to one of ordinary skill in the art to reconfigure the Admitted Prior Art in view of the teaching of Noda to use a second resistor element for connecting the second input element to the constant current circuit, and the end of the second resistor element and the end of the first resistor element would be connected with the constant current circuit so that reset noises would be effectively canceled or removed, thereby improving video signal quality at the output of the amplifier as taught by Noda above.

Regarding claim 6, the Admitted Prior Art in view of Noda clearly discloses that the first input element comprises a first transistor (transistor 210 at Vin+ side) whose

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control electrode (gate electrode) receives the first signal, the second input element comprises a second transistor (another transistor 210 at Vin- side) whose control electrode (gate electrode) receives the second signal, the differential amplifying circuit further comprising: a first operational amplifier (operational amplifier 220 at Vin+ side) whose output portion is connected with the control electrode (the gate electrode) of the first transistor (see Fig. 7 of Admitted Prior Art) and whose input portion is connected with a main electrode (source electrode) of the first transistor; and a second operational amplifier (another operational amplifier 220 at Vin- side) whose output portion is connected with the control electrode (the gate electrode) of the second transistor and whose input portion is connected with a main electrode (source electrode) of the second transistor (see Fig. 7 of Admitted Prior Art).

Regarding claim 7, the Admitted Prior Art in view of Noda also discloses an image pickup device (see Fig. 6 of Admitted Prior Art) comprising:

an image pickup region (pixel region 100 shown in Fig. 6 of Admitted Prior Art) that picks up an object image; and a differential amplifying circuit (150) according to claim 5 or 6 that amplifies a signal from the image pickup region and output the signal (see the analyses of claims 5 & 6 above).

Regarding claim 8, since both the Admitted Prior Art and Noda disclose that the image pickup apparatus is a video camera or a digital camera, inherently disclosed is a signal processing circuit (i.e., a processing circuit for displaying and/or recording of the

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camera) that processes the signal from the differential amplifying circuit (see Admitted Prior Art, page 1, lines 12-17 and Noda, col. 1, lines 6-19).

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
NHAN T. TRAN  
Patent Examiner